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Philips Components-Signetics

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Status	Product Specification
Memory Products	

82LHS191

16K-bit TTL bipolar PROM

Jameco Part Number 27836

DESCRIPTION

The 82LHS191 is field programmable, meaning that custom patterns are immediately available by following the Signetics Generic II fusing procedure. The 82LHS191 is supplied with all outputs at a logical High. Outputs are programmed to a logic Low level at any specified address by fusing the vertical junction matrix.

This device includes on-chip decoding and 3 Chip Enable inputs for ease of memory expansion. It features 3-State outputs for optimization of word expansion in bused organizations.

Ordering information can be found on the following page.

The 82LHS191 devices are also processed to military requirements for operation over the military temperature range. For specifications and ordering information consult the Signetics Military Data Book.

FEATURES

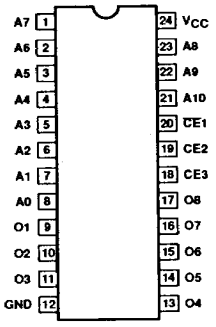
- Address access time: 35ns max
- Power dissipation: 32µW/bit typ
- Input loading: –250µA max
- Three Chip Enable Inputs
- On-chip address decoding
- No separate fusing pins
- Unprogrammed outputs are High level
- Fully TTL compatible
- Outputs: 3-State

APPLICATIONS

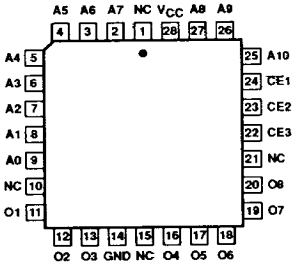
- Prototyping/volume production
- Sequential controllers
- Microprogramming
- Hardwired algorithms
- Control store
- Random logic
- Code conversion

PIN CONFIGURATIONS

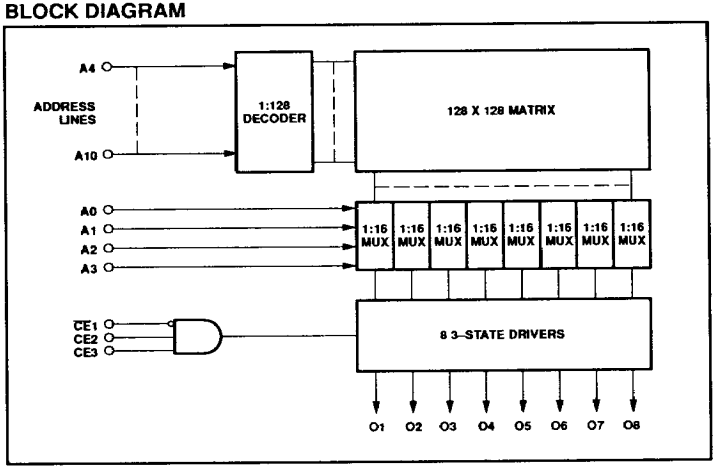
N Package



A Package



BLOCK DIAGRAM



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16K-bit TTL bipolar PROM (2048 × 8) — 82LHS191

ORDERING INFORMATION

PACKAGE DESCRIPTION	ORDER CODE
24-pin Plastic Dual-In-Line 600mil-wide	N82LHS191 N
24-pin Plastic Dual-In-Line 300mil-wide	N82LHS191 N3
28-pin Plastic Leaded Chip Carrier 450mil-square	N82LHS191 A

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	RATING	UNIT
V_{CC}	Supply voltage	+7	V_{DC}
V_{IN}	Input voltage	+5.5	V_{DC}
V_O	Output voltage Off-State	+5.5	V_{DC}
T_{amb}	Operating temperature range	0 to +75	°C
T_{stg}	Storage temperature range	–65 to +150	°C

DC ELECTRICAL CHARACTERISTICS

$0°C \leq T_{amb} \leq +75°C$, $4.75V \leq V_{CC} \leq 5.25V$

SYMBOL	PARAMETER	TEST CONDITIONS[1,2]	LIMITS Min	LIMITS Typ[4]	LIMITS Max	UNIT
Input voltage						
V_{IL}	Low[3]				0.8	V
V_{IH}	High[3]		2.0			V
V_{IC}	Clamp	$I_{IN} = -18mA$		–0.8	–1.2	V
Output voltage						
		$\overline{CE}_1$ = Low, $CE_{2,3}$ = High				
V_{OL}	Low	$I_{OUT} = 16mA$			0.5	V
V_{OH}	High	$I_{OUT} = -2mA$	2.4			V
Input current						
I_{IL}	Low	$V_{IN} = 0.45V$			–250	μA
I_{IH}	High	$V_{IN} = 5.25V$			40	μA
Output current						
I_{OZ}	Hi–Z state	$\overline{CE}_1$ = High, $CE_{2,3}$ = Low, $V_{OUT} = 0.5V$			–40	μA
		$\overline{CE}_1$ = High, $CE_{2,3}$ = Low, $V_{OUT} = 5.25V$			40	
I_{OS}	Short circuit[3]	$\overline{CE}_1$ = Low, $CE_{2,3}$ = High, $V_{OUT} = 0V$	–15		–70	mA
Supply current[5]						
I_{CC}		$V_{CC} = 5.25V$		100	110	mA
Capacitance						
		$\overline{CE}_1$ = High, $CE_{2,3}$ = Low				
		$V_{CC} = 5.0V$				
C_{IN}	Input	$V_{IN} = 2.0V$		5		pF
C_{OUT}	Output	$V_{OUT} = 2.0V$		8		pF

NOTES:
1. Positive current is defined as into the terminal referenced.
2. All voltages with respect to network ground.
3. Duration of short circuit should not exceed 1 second.
4. Typical values are at $V_{CC} = 5V$, $T_A = +25°C$.
5. Measured with all inputs grounded and all outputs open.

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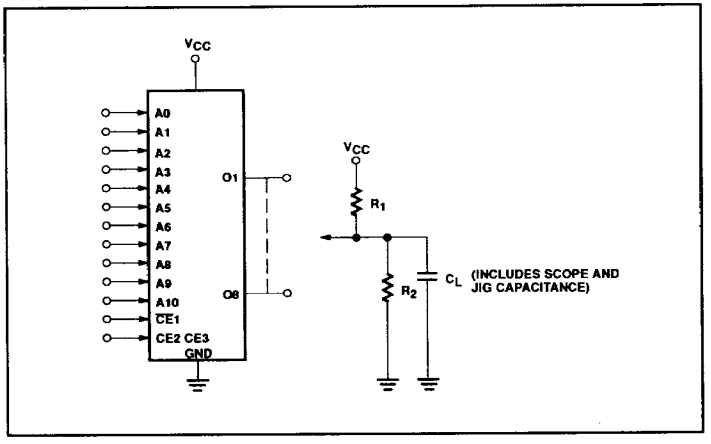
AC ELECTRICAL CHARACTERISTICS

$R_1 = 270\Omega$, $R_2 = 600\Omega$, $C_L = 30pF$, $0°C \leq T_A \leq +75°C$, $4.75V \leq V_{CC} \leq 5.25V$

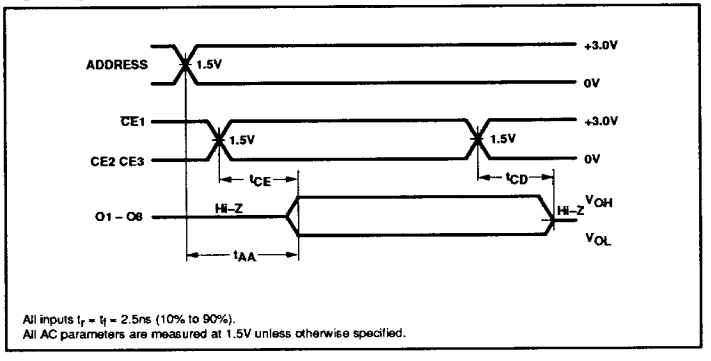
SYMBOL	PARAMETER	TO	FROM	LIMITS Min	LIMITS Typ[1]	LIMITS Max	UNIT
Access time[2]							
t_{AA}		Output	Address		30	35	ns
t_{CE}		Output	Chip Enable		15	20	ns
Disable time[3]							
t_{CD}		Output	Chip Disable		15	20	ns

NOTES:
1. Typical values are at $V_{CC} = 5V$, $T_A = +25°C$.
2. Tested at an address cycle time of 1μs.
3. Measured at a delta of 0.5V from Logic Level with $R_1 = 750\Omega$, $R_2 = 750\Omega$, $C_L = 5pF$.

TEST LOAD CIRCUITS



VOLTAGE WAVEFORMS



All inputs $t_r = t_f = 2.5ns$ (10% to 90%).
All AC parameters are measured at 1.5V unless otherwise specified.

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